3D High Density Wave Interconnects, Phase II

Completed Technology Project (2011 - 2014)

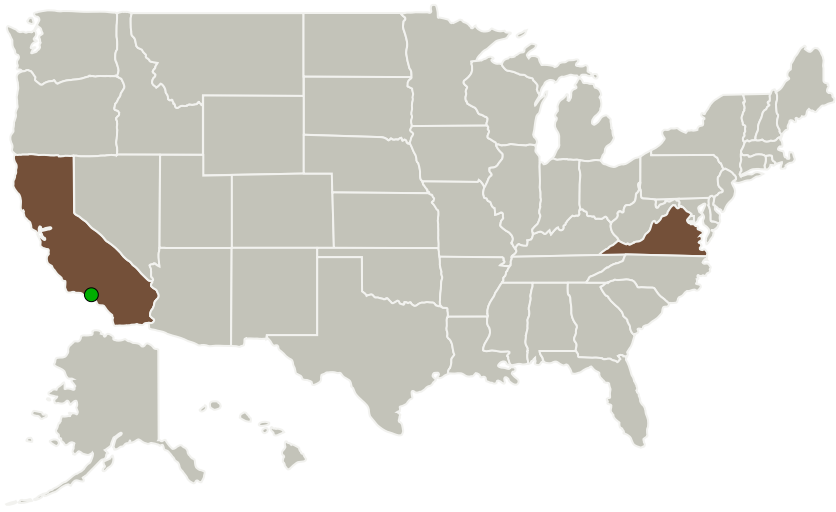
Project Introduction

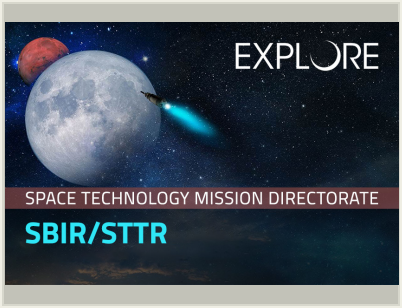
Nuvotronics has developed and optimized the PolyStrata

TM

process for the fabrication of intricate microwave and millimeter-wave devices. These devices have primarily been rectangular coaxial transmission lines, although rectangular waveguide and other structures have also been demonstrated. Intricate devices have been demonstrated with insertion loss 5 to 10 times lower than traditional planar circuits; isolation better than 60dB for lines that share separating walls; multiple levels of densely-packed coaxial circuits; and low-parasitic attachment to active devices and traditional circuit boards. In this Phase II project, Nuvotronics will optimize and fabricate high density low-loss millimeter backplane circuits to package and interconnect components of future NASA millimeter wave (MMW) radars. The significance of the innovation primarily lies in three areas: reduction of system size, weight and loss in MMW radars. The PolyStrata technology is a batch manufacturing process, providing economies of scale and cost reduction for higher volumes, in addition to flexibility in design for various frequencies of interest.

Primary U.S. Work Locations and Key Partners





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Organizations Performing Work	Role	Type	Location
Nuvotronics, Inc	Lead Organization	Industry	Radford, Virginia
Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

Primary U.S. Work Locations	
California	Virginia

Project Transitions

June 2011: Project Start

May 2014: Closed out

Closeout Summary: 3D High Density Wave Interconnects, Phase II Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/138714)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Nuvotronics, Inc

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

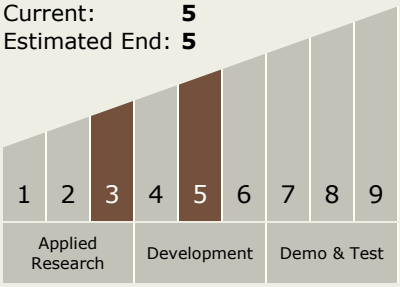
Carlos Torrez

Principal Investigator:

Jean Marc Rollin

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.2 Electronics

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System